

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference DEXCOM.027QP	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/US2008/066600	International filing date ( <i>day/month/year</i> ) 11 June 2008 (11.06.2008)	Priority date ( <i>day/month/year</i> ) 13 June 2007 (13.06.2007)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant DEXCOM, INC.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 <i>bis</i> .1(a).																								
2.	<p>This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																							
4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 17 December 2009 (17.12.2009)
Facsimile No. +41 22 338 82 70	Authorized officer <div style="text-align: center; font-weight: bold; margin-top: 10px;">Dorothee Mülhausen</div> e-mail: pt01.pct@wipo.int

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:  
JOSEPH J. MALLON  
KNOBBE MARTENS OLSON & BEAR LLP  
2040 MAIN STREET  
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IRVINE, CA 92614

Date of mailing  
(day/month/year) **07 OCT 2008**

Applicant's or agent's file reference  
DEXCOM.027QP

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US 08/66600

International filing date (day/month/year)

11 June 2008 (11.06.2008)

Priority date (day/month/year)

13 June 2007 (13.06.2007)

International Patent Classification (IPC) or both national classification and IPC

IPC(8) - A61B 5/00 (2008.04)

USPC - 600/365

Applicant DEXCOM, INC.

## 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US  
Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450, Alexandria, Virginia 22313-1450  
Facsimile No. 571-273-3201

Date of completion of this opinion

30 September 2008 (30.09.2008)

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300  
PCT OSP: 571-272-7774

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 08/66600

**Box No. 1      Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:
  - ☒ the international application in the language in which it was filed.
  - ☐ a translation of the international application into \_\_\_\_\_ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
  - a. type of material
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material
    - ☐ on paper
    - ☐ in electronic form
  - c. time of filing/furnishing
    - ☐ contained in the international application as filed
    - ☐ filed together with the international application in electronic form
    - ☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	NONE	YES
	Claims	1-34	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-34	NO
Industrial applicability (IA)	Claims	1-34	YES
	Claims	NONE	NO

**2. Citations and explanations:**

Claims 1-34 lack novelty under PCT Article 33(2) as being anticipated by US 2007/0032706 A1 to Kamath et al. (hereinafter "Kamath").

In regards to claim 1, Kamath teaches a method for analyzing data from a continuous analyte sensor (para [0127]), the method comprising: receiving data from an analyte sensor (para [0008]); detecting an occurrence of a signal artifact event based at least in part on an amplitude of a signal artifact, including detecting a start and an end of a signal artifact event (Abstract; para [0007], [0187], [0368]); and processing the received data, wherein the processing is based at least in part upon whether the signal artifact event occurs (para [0008]).

In regards to claim 2, Kamath teaches that the detecting the occurrence of a signal artifact event comprises determining an amplitude of sensor data and determining an amplitude of a signal artifact (para [0162], [0292], [0368]).

In regards to claim 3, Kamath teaches that the detecting the occurrence of a signal artifact event comprises detecting a start of a signal artifact event when an amplitude of a signal artifact meets a first predetermined condition (para [0046], [0049], [0237], [0483], [0484]).

In regards to claim 4, Kamath teaches that the detecting the occurrence of a signal artifact event comprises detecting an end of a signal artifact event when an amplitude of a signal artifact meets a second predetermined condition (para [0046], [0049], [0237], [0483], [0485]).

In regards to claim 5, Kamath teaches that the first predetermined condition is different from the second predetermined condition (para [0046], [0049], [0237], [0488]).

In regards to claim 6, Kamath teaches that the detecting an occurrence of a signal artifact event comprises comparing received data with filtered data to obtain at least one residual (para [0471]).

In regards to claim 7, Kamath teaches that the first predetermined condition is a residual amplitude that is at least about 5% of a sensor data amplitude, and wherein the second predetermined condition is a residual amplitude that is no more than about 5% of a sensor data amplitude (para [0329], [0400], and [0420]).

In regards to claim 8, Kamath teaches that the detecting an occurrence of a signal artifact event comprises determining a differential between a first residual at a first time point and a second residual at a second time point (para [0471], [0472]).

In regards to claim 9, Kamath teaches that the first predetermined condition is a differential amplitude that is at least about 5% of a sensor data amplitude, and wherein the second predetermined condition is a differential amplitude that is no more than about 5% of a sensor data amplitude (para [0329], [0400], and [0420]).

In regards to claim 10, Kamath teaches that the processing the received data comprises displaying a graphical representation of filtered data responsive to a determination of a start of a signal artifact event (para [0024], [0245]).

In regards to claim 11, Kamath teaches that the received data comprises unfiltered data, and wherein processing the received data comprises displaying a graphical representation of the unfiltered data responsive to a determination of an end of a signal artifact event (para [0480]).

In regards to claim 12, Kamath teaches that the processing the received data comprises displaying a graphical representation of the unfiltered data except when a signal artifact event occurs (para [0480]).

In regards to claim 13, Kamath teaches a method for displaying data from a continuous analyte sensor (para [0127]), the method comprising: receiving data from an analyte sensor, including at least one of unfiltered data and filtered data (para [0008], [0056], and [0480]); detecting an occurrence of a signal artifact event based at least in part on an amplitude of a signal artifact, including detecting a start and an end of a signal artifact event (para [0007], [0483]-[0485]); and displaying a graphical representation of filtered data responsive to a determination of a start of a signal artifact event (para [0245]).

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 08/66600

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Continuation of:  
Box V (2):

In regards to claim 14, Kamath teaches that the received data comprises unfiltered data, and wherein processing the received data comprises displaying a graphical representation of the unfiltered data responsive to a determination of an end of a signal artifact event (para [0480]).

In regards to claim 15, Kamath teaches that the processing the received data comprises displaying a graphical representation of the unfiltered data except when a signal artifact event occurs (para [0480]).

In regards to claim 16, Kamath teaches a device comprising a computer readable memory, the computer readable memory containing code for analyzing data from a continuous analyte sensor (para [0118]-[0121], [0127], [0215]), wherein the code comprises: instructions for receiving data from an analyte sensor, the data comprising at least one sensor data point (para [0008], [0215]); instructions for detecting an occurrence of a signal artifact event based at least in part on an amplitude of a signal artifact (Abstract; para [0007], [0187], [0215], [0368]); and instructions for processing the- received data, wherein the processing is based at least in part upon whether a signal artifact event has occurred (para [0008]).

In regards to claim 17, Kamath teaches that the instructions for detecting an occurrence of a signal artifact event comprise instructions for determining an amplitude of the sensor data and instructions for determining an amplitude of a signal artifact (para [0162], [0292], [0368]).

In regards to claim 18, Kamath teaches that the instructions for detecting an occurrence of a signal artifact event comprise instructions for detecting a start of a signal artifact event when an amplitude of a signal artifact meets a first predetermined condition (para [0046], [0049], [0237], [0483], [0484]).

In regards to claim 19, Kamath teaches that the instructions for detecting an occurrence of a signal artifact event comprise instructions for detecting an end of a signal artifact event when an amplitude of a signal artifact meets a second predetermined condition (para [0046], [0049], [0237], [0483], [0485]).

In regards to claim 20, Kamath teaches that the first predetermined condition is different from the second predetermined condition (para [0046], [0049], [0237], [0488]).

In regards to claim 21, Kamath teaches that the instructions for detecting an occurrence of a signal artifact event comprise instructions for comparing the received data with filtered data to obtain at least one residual (para [0471]).

In regards to claim 22, Kamath teaches that the first predetermined condition is a residual amplitude that is at least about 5% of a sensor data amplitude, and wherein the second predetermined condition is a residual amplitude that is no more than about 5% of a sensor data amplitude (para [0329], [0400], and [0420]).

In regards to claim 23, Kamath teaches that the instructions for detecting an occurrence of a signal artifact event comprise instructions for determining a differential between a first residual at a first time point and a second residual at a second time point (para [0471], [0472]).

In regards to claim 24, Kamath teaches that the first predetermined condition is a differential amplitude that is at least about 5% of a sensor data amplitude, and wherein the second predetermined condition is a differential amplitude that is no more than about 5% of a sensor data amplitude (para [0329], [0400], and [0420]).

In regards to claim 25, Kamath teaches a device comprising a computer readable memory, the computer readable memory containing code for displaying data from a continuous analyte sensor (para [0118]-[0121], [0127], [0215]), wherein the code comprises: instructions for receiving data from an analyte sensor, the data comprising at least one unfiltered or filtered sensor data point (para [0008], [0056], [0215] and [0480]); instructions for detecting an occurrence of a signal artifact event based at least in part on an amplitude of a signal artifact event (para [0007], [0118]-[0121], [0215]); and instructions for displaying a graphical representation of filtered data responsive to a determination of a start of a signal artifact event (para [0245], [0480]).

In regards to claim 26, Kamath teaches that the received data comprises an unfiltered signal, and wherein the instructions for processing the received data comprise instructions for displaying a graphical representation of the unfiltered data responsive to a determination of an end of a signal artifact event (para [0480]).

In regards to claim 27, Kamath teaches that the received data comprises an unfiltered signal, and wherein the instructions for processing the received data comprise instructions for displaying a graphical representation of the unfiltered data except when a signal artifact event has occurred (para [0480]).

In regards to claim 28, Kamath teaches a system configured to continuously measure an analyte in a host (para [0127]), the system comprising: an analyte sensor configured to provide sensor data indicative of an analyte concentration in a host (para [0008] and [0184]); electronics operably connected to the sensor and comprising programming configured to detect a signal artifact event based at least in part on an amplitude of a signal artifact, including detecting a start and an end of a signal artifact event, wherein the electronics further comprise programming configured to process the sensor data, wherein the processing is based at least in part upon whether the signal artifact event is detected (para [0008], [0215], [0329], [0420], [0483]-[0485]).

In regards to claim 29, Kamath teaches that the programming configured to detect a signal artifact event comprises programming configured to determine an amplitude of the sensor data and programming configured to determine an amplitude of a signal artifact (para [0046], [0049], [0237], [0215], [0292], [0368]).

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITYInternational application No.  
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## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:  
Box V (2):

In regards to claim 30, Kamath teaches that the programming configured to detect a signal artifact event comprises programming configured to detect a start of a signal artifact event when then an amplitude of a signal artifact meets a first predetermined condition (para [0046], [0049], [0237], [0483], [0484]).

In regards to claim 31, Kamath teaches that the programming configured to detect a signal artifact event comprises programming configured to detect an end of a signal artifact event when an amplitude of a signal artifact meets a second predetermined condition (para [0046], [0049], [0237], [0483], [0485]).

In regards to claim 32, Kamath teaches a system configured to continuously measure an analyte in a host (para [0127]), the system comprising: an analyte sensor configured to provide sensor data indicative of an analyte concentration in a host (para [0008] and [0184]); electronics operably connected to the sensor and comprising programming configured to detect a signal artifact event based at least in part on an amplitude of a signal artifact, and wherein the programming configured to process the sensor data comprises programming configured to display a graphical representation of filtered data responsive to a determination of a start of a signal artifact event (para [0008], [0215], [0329], [0420], [0480]).

In regards to claim 33, Kamath teaches that the sensor data comprises unfiltered data, and wherein the programming configured to process the sensor data comprises programming configured to display a graphical representation of the unfiltered data responsive to a determination of an end of a signal artifact event (para [0480]).

In regards to claim 34, Kamath teaches that the sensor data comprises unfiltered data, and wherein the programming configured to process the sensor data comprises programming configured to display a graphical representation of the unfiltered data except when a signal artifact event has occurred (para [0480]).

Claims 1-34 have industrial applicability as defined by PCT Article 33(4), because the subject matter can be made or used in industry.